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| 10/779,988 | 02/17/2004 | Gerrit Konijn | TS1194 (US) | 1334 |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**



Application Number: 10/779,988
Filing Date: February 17, 2004
Appellant: KONIJN, GERRIT

Mr. William E. Hickman
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed October 10, 2007 appealing from the Office action mailed February 22, 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct. Appellant states that only the rejection of claim 1, as unpatentable over DE 38 32 420 A1 under 35 U.S.C. 103(a), is subject to review on this appeal.

**GROUNDS OF REJECTION NOT ON REVIEW**

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief.

The rejection of claims 3, 4, and 6-8 under 35 U.S.C. 103(a) as being unpatentable over De 38 32 420 A1 taken together with EPO 0 048 508 A2.

The rejection of claims 9-14 under 35 U.S.C. 103(a) as being unpatentable over De 38 32 420 A1 taken together with EPO 0 048 508 A2, and further in view of Sheinman.

It is also noted that dependent claim 5, which stands rejected along with independent claim 1, as unpatentable over DE 38 32 420 A1 under 35 U.S.C. 103(a), has not been argued by appellant, as appellant has only specifically argued the rejection of independent claim 1.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

| | | |
|---|---|---|
| DE 38 32 420 A1 | ARTEMOV et al | 04-1990 |

**(9) Grounds of Rejection**

The following ground of rejection is applicable to appealed claim 1:

Claims 1 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over DE 38 32 420 A1.

DE 38 32 420 A1 (Fig. 1) substantially discloses appellant's invention as recited by instant claims 1 and 5, except for the bottom of the return skirt (14) being within 30% of the spacing between the upper and lower walls (6,7), counted from the lower wall. It is noted that Fig. 1 of the reference suggests that the bottom end of the skirt (14) is

located about 3/8 or 37.5% of the spacing between the upper and lower walls (6,7), counted from the lower wall. Clearly one having ordinary skill in the art would recognize that the position of the bottom of the return skirt, which controls the entry point of the liquid-enriched fluid into the free inner space, would be dictated by the amount of secondary separation required and desired, the deeper within the free space that the skirt extends accounting for the pressure drop across the separation tray, which directly effects the energy input requirement to operate the separation column. Since the reference clearly discloses a return skirt height that is very similar to that as recited by appellant's instant independent claim 1, absent an unexpected showing of criticality, it would have been obvious for an artisan at the time of the invention, to modify the placement of the bottom of the return skirt to within 30% of the spacing between the upper and lower walls (6,7), counted from the lower wall, since such would provide incrementally improved phase separation in a well understood manner, albeit at the expense of increased pressure drop across the separation tray.

**(10) Response to Argument**

Appellant argues, at the bottom of page 4 of the Appeal Brief, that the applied prior art (DE 38 32 420 A1) does not teach or suggest the desirability of extending the open cap (14) of the reference to a position within 30% of the spacing between the upper and lower walls (7,6) of the separation tray, counted from the lower wall (6). Appellant repeats this argument several times on page 5 using slightly different terminology. Appellant also requests that the Examiner support his personal knowledge of the state of the art with an affidavit pursuant to 37 CFR 1.104(d)(2).

With regard to what the applied reference specifically teaches, as stated in Final Office action, repeated above in the rejection statement under review on this appeal, and never specifically disputed by appellant, the reference suggests extension of the bottom of the open cap (14) to about 37.5% of the spacing between the upper and lower walls (6,7), counted from the lower wall. The downward extension of the cap (14) of the reference requires all of the liquid-enriched fluid that exits the top of tube (8) through the gap at (10) into the cap (14), to travel downwardly into the free inner space (3), wherein the downward inertial forces imparted to the liquid-enriched fluid causes further separation of the heavier liquid phase, which exits from the free inner space through liquid outlet (5), while allowing subsequent upward movement of the lighter gaseous phase through the secondary, dry gas outlet (13). As stated by appellant in the instant specification, at page 5, lines 14-17, and 29-34, page 6, lines 19-25, and page 7, lines 1-11, the means for removing and guiding the liquid-enriched fluid to the free inner space has its outlet position within 50%, more preferably within 30% of the spacing between upper and lower walls, counted from the lower wall, to allow settling out of the entrained liquid. Appellant goes on to state that such positioning is chosen to eliminate short-circuiting of the liquid-enriched fluid to the secondary gas outlets and to impart downward movement to all of the liquid-enriched fluid entering the free inner space. Clearly, the reference teaches positioning the bottom of cap (14) at such a location to eliminate short-circuiting of the liquid-enriched fluid to the secondary gas outlets and to impart downward movement to all of the liquid-enriched fluid entering the free inner space.

With regard to the motivation to place the bottom of the cap within 30% of the spacing between upper and lower walls, counted from the lower wall, as stated above, one having ordinary skill in the art recognizes that the position of the bottom of the return skirt, controls both the degree of separation of the phases and the amount of pressure drop across the separation tray. In basic terms, the deeper the extension of the cap (14) toward the lower wall (6) of the separation tray, the greater the degree of separation, but also the higher the pressure drop across the tray. One having ordinary skill in the pertinent art will thus determine the appropriate amount of cap extension based upon desired level of separation and an acceptable pressure drop, which determines the amount of energy input required to operate the column.

It is noted that appellant has never drawn a distinction of criticality between positioning the bottom of the cap (means for removing and guiding the liquid-enriched fluid to the free inner space) within 30% of the spacing between upper and lower walls, counted from the lower wall, over either the 50%, as generally disclosed by appellant as acceptable, or the about 37.5% position, as suggested by the applied prior art reference.

With regard to appellant's request that the Examiner support his personal knowledge of the state of the art with an affidavit pursuant to 37 CFR 1.104(d)(2), such is refused, since the rejection of appealed claim 1 is not based upon the Examiner's level of skill within the art, but instead is based upon the teaching and suggestions of the applied prior art, given the ordinary level of skill within the art, i.e., the understanding of the co-dependency of degree of separation vs. pressure drop(which dictates energy

input requirement) within a gas-liquid separation column having internal contact elements.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Scott Bushey,

Primary Examiner, AU 1797

10/29/07

Conferees:

Duane Smith, SPE 1797

10-29-07

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